ATTACHMENT II

A wide variety of scientific studies have been submitted in this matter. The staff and the Commission's consultants have carefully reviewed each study, and the Commission will consider each study in resolving this controversy. Although questions and concerns have been raised about each study submitted, the staff believes that by providing each cigarette company a specific opportunity to address the questions and methodological concerns raised about the air dilution research submitted by Philip Morris, Inc. and the cotinine research submitted by the Brown and Williamson Tobacco Corporation, this investigation can be most expeditiously concluded.

The following questions and concerns have been raised about the methodology used in the Philip Morris air dilution research.

1.) Questions have been raised about the impact of the sample size on the validity and reliability of the results.

2.) Questions have been raised regarding whether the use of Philip Morris employees as subjects biases the results.

3.) Questions have been raised regarding whether the fact that some of the subjects may have known the purpose of the study biases the results.

4.) Questions have been raised regarding whether the use of Philip Morris employees to conduct this research biases the results.

5.) Questions have been raised regarding whether the special apparatus designed by Philip Morris for this research to measure air dilution prevents normal smoking behavior, and regarding whether the placement of the dental dam on the cigarette filter biases the results against Barclay.

6.) To what extent did the data for each subject tested vary? Does the raw data for each subject still exist? Can it be made available to the Commission staff?

7.) What cigarette did each subject tested customarily smoke? If they smoked a cigarette during the air dilution test different from their customary cigarette, what impact, if any, did this fact have on the results? Was each subject tested also tested on their customary cigarette? If not, why not?

The following questions and concerns have been raised about the cotinine research conducted by Dr. Gio Gori and submitted by Brown and Williamson.

1.) Barclay was the only cigarette tested that yields more than 0.1 mg. nicotine per cigarette by the F.T.C. method. Questions have been raised about the usefulness of this data absent results from other cigarettes with a yield of 0.2 mg. nicotine per cigarette by the F.T.C. method. In addition, it has been suggested that this data be supplemented by tests on a series of cigarettes with yields over 0.2 mg. nicotine per cigarette by the F.T.C. method, in order to evaluate more accurately whether a dose-response relationship exists between the F.T.C. method and the plasma cotinine research. Does this data exist? Can it be made available to the Commission staff? To what extent would this data be useful in evaluating the merits of cotinine research?

2.) The data for the twelve subjects from Study A was extracted from a separate ongoing study. Did that study yield any cotinine data on subjects who smoked cigarettes other than Carlton, Barclay, or Cambridge? If so, what was that data?

3.) Does any cotinine data exist on subjects who smoked cigarettes other than those cigarettes tested in Studies A and B. If so, what is that data?

4.) What scientific literature exists to indicate that cotinine research using the methods and equipment used by Dr. Gori is sensitive and reliable enough to distinguish accurately between, or measure at all, the nicotine yields at issue in this matter.

5.) It has been suggested that one method of validating the existence of a relationship between the F.T.C. testing program and cotinine research is to conduct the cotinine research over a period of time on a large enough sample of smokers, each smoking the cigarette they regularly smoke, to determine whether there are any differences in the cotinine levels between each group of smokers. Although this approach has drawbacks in terms of variations in individual behavior and metabolism, it has the advantage of avoiding potential error in the results due to any smoker compensation from brand switching. Does this type of data exist? If so, what is the data? To what extent would this data be useful in evaluating the merits of cotinine research?

6.) Among those subjects included in Studies A and B, what cigarette brand did each customarily smoke?

7.) To what extent did the data for each subject tested vary? Does the raw data for each subject still exist? Can it be made available to the Commission staff?

8.) On page 13 of Dr. Gori's report, he notes that cotinine recovery averaged 81% in ten samples. To what extent did

each sample vary? Does the data from this "recovery study" exist? If so, can it be made available to the Commission staff along with a more detailed description of the methodology used in doing the "recovery study?"

9.) What was the analytical calibration curve of the gas chromatograph calibration?

10.) Was data recorded on the height, weight, sex, and age of each subject tested? Can this data be made available to the Commission staff?

The purpose of listing these particular questions and concerns is to help focus the remainder of this investigation. You should feel free however, to comment on or provide additional information about any of the other studies already submitted, or to provide results of additional research, if you so desire.